

REMARKS

Claims 1 to 6 and 8 were rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Costantino, EP 1069232. Claims 1 and 3 to 6 were rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Horrocks, U.S. Patent No. 5,645,926. Claims 1, 3, 4, 8 and 10 were rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Sumii, U.S. Patent No. 5,217,799. Claims 1 to 4, 8 and 9 were rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Reinhard et al., GB 1,054,877. Claims 16 to 18 were rejected under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Utsumi, U.S. Publication No. 2005/0249931. Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Horrocks et al. in view of an article by Liu, et al.

Reconsideration of the application is respectfully requested.

Rejections under 35 U.S.C. §§102(b), (e) and 103(a)

Claims 1 to 6 and 8 were rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Costantino, EP 1069232. Claims 1 and 3 to 6 were rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Horrocks et al., U.S. Patent No. 5,645,926. Claims 1, 3, 4, 8 and 10 were rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Sumii et al., U.S. Patent No. 5,217,799. Claims 1 to 4, 8 and 9 were rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Reinhard et al., GB 1,054,877.

Costantino discloses an artificial leather type textile being made fireproof, Horrocks et al. a charred fiber structure for protective clothing and upholstery, Sumii et al. car interior materials such as the ceiling. Reinhard et al., a carded fleece and Utsumi discloses a laminate of nonwoven fabrics and an automotive internal trim panel, such as a headlining, a rear package tray, a door trim, a floor insulator a trunk trim or a dashboard insulator.

Claim 1 recites an engine compartment lining cover layer comprising:

at least one binder-bonded nonwoven engine compartment lining cover layer, the nonwoven layer being bonded using a binder having a thermoplastic behavior in the temperature range of 20° to 200°C and a thermosetting behavior above 200°C.

None of the cited references teach or disclose an engine compartment lining cover layer, and in fact their uses would not lead one of skill in the art to use or imagine them for use as engine compartment linings. There is absolutely no teaching or disclosure in any of the prior art references of an engine compartment lining cover layer, as recited in claim 1.

Costantino discloses “the product being treated for fireproofing is subjected to heating to dry the product and ensure the cross-linking of the binder.” Costantino thus provides an entirely cross-linked binder.

Thermosetting occurs via a cross-linking process, and when fully cross-linked or cured, a thermoset plastic is in a strong form, for example, in a molded shape such as an engine compartment. See paragraph [0017] of the present application, for example.

In Costantino, the binder clearly does NOT thermoset, “the product being treated for fireproofing is subjected to heating to dry the product and ensure the cross-linking of the binder.” When cured or cross-linked, the fabric material in Costantino is a flexible leather-like fabric and the binder does not thermoset. The fabric remains thermoplastic. The exact materials in Costantino are not the same as the present invention and are not combined or processed in the same manner and clearly do not have a binder having “a thermosetting behavior above 200°C” because the fabric remains flexible even when it is cross-linked. Any further heat or other treatment would not thermoset the binder in Costantino, as cross-linking is already completed. See paragraph [0017], for example, where pre-cross linking occurs in the present invention.

Horrocks et al. discloses, “The composite material was then heated at 120°C for 5 minutes, to enable bonding of the intumescent/resin combination to the fibres.” (See col. 10, lines 39 to 41).

Horrocks et al. does not disclose “a thermosetting behavior above 200°C.” Horrocks et al. is for fire resistant materials where flexibility remains until charring. In fact, if the material in Horrocks et al. thermosets, the material would not be suitable for use as protective clothing because it would prevent movement by emergency personnel. (See col. 1 lines 14 to 19). It is clear the binder remains thermoplastic until fabric charring. (See col. 12, lines 37 to 41).

Sumii et al. discloses “The emulsion impregnated surface of the obtained non-woven fabric is laminated on web composed of a fiber made of a co-polymer of nylon-6, nylon-6, 6 and nylon-12 and is heated to 110°C to bond the non-woven fabric and the web.” (See col. 5, lines 3 to 10).

Sumii et al. does not disclose a binder having “thermoplastic behavior in the temperature range of 20° to 200°C and a thermosetting behavior above 200°C” as it appears to bond at 110°C and have shape stability. Thus, the material is no longer thermoplastic above the bonding temperature, 110°C. (See col. 5 lines 3 to 17).

Reinhard et al. discloses self-extinguishing bonded non-woven fabrics. Reinhard et al. does not disclose “a thermosetting behavior above 200°C.” The impregnated non-woven fabric in Reinhard is “dried for three minutes at 110°C and for another three minutes at 150°C. (See page 2, lines 69 to 71). The material in Reinhard et al. is used as furnishing fabrics or upholstery fabrics and remains flexible. The material does not thermoset.

The prior art discussed above does not show or teach “a binder having a thermoplastic behavior in the temperature range of 20° to 200°C and a thermosetting behavior above 200°C” as recited in claim 1. The prior art shows different variations of styrene, butadiene and/or acrylonitrile and different properties resulting therefrom. The presumption in the Office Action does not result in the claimed properties. See Horrocks et al., Sumii et al., and Reinhard et al., there is no evidence of thermosetting.

Withdrawal of the rejections to claim 1 and the dependent claims is respectfully requested.

Claims 16 to 18 were rejected under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Utsumi, U.S. Publication No. 2005/0249931.

Utsumi discloses “one or more rigid layers of the entanglement-based nonwoven fabric.” The nowoven used as the rigid layer is passed through a “calendar at an ordinary temperature” in Sample 1, “through a calendar at 100°C” in Sample 2, “through a calendar at 150°C” in Sample 3, and “through a calendar 180°C” in Sample 4.

Claim 16 recites an engine compartment lining comprising:

at least one binder-bonded nonwoven thermoset engine compartment lining cover layer, the nonwoven layer being bonded using a binder having a thermoplastic behavior in the temperature range of 20° to 200°C and a thermosetting behavior above 200°C; and a substrate made of reclaimed wool.

The nonwoven layer in Utsumi is rigid at an ordinary temperature, 100°C, 150°C and 180°C, thus the nonwoven is no longer thermoplastic. The nonwoven, in Utsumi, thus, is not bonded using a binder having a “thermoplastic behavior in the temperature range of 20° to 200°C and a thermosetting behavior above 200°C” as claimed. Utsumi shows rigid behavior in this range.

Withdrawal of the rejection to claim 16 is respectfully requested.

With further respect to claim 17, claim 17 recites “the cover layer is attached to a substrate made of reclaimed wool.” No reclaimed wool is disclosed.

With further respect to claim 18, claim 18 recites “the binder is a foam binder.” Utsumi does not disclose a foam binder. It is not true that binder form does not affect the product and there is no motivation provided to modify the reference.

In view of the arguments above with respect to claim 1, withdrawal of the rejections to dependent claims 17 and 18 is respectfully requested.

Rejections under 35 U.S.C. §103(a)

Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Horrocks et al., in view of an article by Liu, et al.

In view of the arguments above with respect to claim 1, withdrawal of the rejection to claim 7 is respectfully requested.

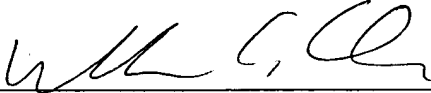
Withdrawal of the rejection to claim 7 is respectfully requested.

CONCLUSION

The present application is respectfully submitted to be in condition for allowance and such action is respectfully requested.

Respectfully Submitted,

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